



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 5

## **Complete if Known**

Application Number	09/868,752
Filing Date	September 4, 2001
First Named Inventor	Nichols
Group Art Unit	2121 2129
Examiner Name	Bell Buss
Attorney Docket Number	005222.0018

**RECEIVED**  
MAY 11 2004  
Technology Center 2100

## **U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			

## **FOREIGN PATENT DOCUMENTS**

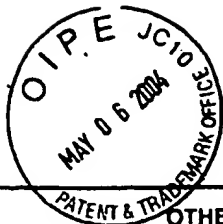
Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>2</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				

## **OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
BB	1	W. Doube, "A Browser-Based System to Support & Deliver DE," 1998 FIE Conference, Conference Proceedings, Vol. 1, pp. 479-484, Nov. 4-7, 1998	
	2	W. Regian and G. Pitts, "A Fuzzy Logic-Based Intelligent Tutoring System (ITS)," Information Processing 92, Vol. II, pp. 66-72, Dec. 1992.	
	3	J. Reye, "A Goal-Centered Architecture for Intelligent Tutoring Systems," Proc. of 7th World Conf. on Artificial Intelligence in Education, pp. 307-314, Aug. 1995	
	4	R. Schank and D. Edelson, "A Role for AI in Education: Using Technology to Reshape Education", Northwestern University, The Institute for the Learning Sciences, Journal of Artificial Intelligence in Education, Winter 1990, pp. 1-24, January 1990	
	5	A. Nowakowski, "A Special Section - Goal Based Scenarios: A New Approach to Professional Education: Reengineering Education at Andersen Consulting," Educational Technology, pp. 3-8, Nov.-Dec. 1994	
	6	R. Chellappa, A. Barua and A. Whinston, "An Electronic Infrastructure for a Virtual University," Communications of the ACM, Vol. 40, No. 9, pp. 56-58, Sep. 1997.	
	7	K. Itoh M. Itami, K. Ichihara, J. Matsushita, T. Nomizo, T. Shimomura and T. Takahashi, "An Object-Oriented Architecture for Evolutional Development of Interactive Learning Environment with Coached Problem-Solving," Proc. Of 1997 World Conf. On Artificial Intelligence in Education, pp. 592-94, Dec. 1997	
	8	K. Nakabayashi, M. Maruama, Y. Koike, Y. Kato, H. Touhei and Y. Fukuhara, "Architecture of an Intelligent Tutoring System on the WWW," Artificial Intelligence in Education, pp. 39-46, Dec. 1997	
	9	D. McArthur, "Artificial Intelligence and Mathematics Education" at <a href="http://www.rand.org/ho/mcarthur/Papers/aled.html">http://www.rand.org/ho/mcarthur/Papers/aled.html</a> , pp. 1-8, Jan. 2001	
	10	T. Murray, "Authoring Intelligent Tutoring Systems: An Analysis of the State of the Art" at <a href="http://www.cs.umass.edu/~tmurray/papers/ATSummary/AuthTools.html">http://www.cs.umass.edu/~tmurray/papers/ATSummary/AuthTools.html</a> , pp. 1-35, July 2001	
BB	11	"Automate Your Business Plan Software" at <a href="http://www.business-plan.com/automate.html">www.business-plan.com/automate.html</a> , pp. 1-4, July 2001	

/Benjamin Buss/

01/09/2007



OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
BB	12	A. Gonzalez and L. Ingraham, "Automated Exercise Progression in Simulation-Based Training," IEEE Trans. On Systems, Man, and Cybernetics, Vol. 24, No. 6, pp. 863-74, June 1994	
	13	A. Muntjewerff, "Automated Training of Legal Reasoning" at <a href="http://www.bileta.ac.uk/94papers/muntjewerff.html">http://www.bileta.ac.uk/94papers/muntjewerff.html</a> , pp. 7, July 2001, 9 <sup>th</sup> BILETA Conference April, 1994	
	14	"Brainmaker" at <a href="http://people.becon.org/~echoscan/28-04.htm">http://people.becon.org/~echoscan/28-04.htm</a> , July 2001	
	15	Brainmaker Neural Network Application Examples at <a href="http://www.calsci.com/Applications.html">http://www.calsci.com/Applications.html</a> , January 2001	
	16	C. Robinson, E. Arias and H. Eden, "Bridging the Virtual and the Physical: The InterSim as a Collaborative Support Interface," Artificial Intelligence in Education, pp. 556-58, Dec. 1997	
	17	C. Shreiner, "CAPTOR a Model for Delivering Web-Based Intelligent Tutoring System Technology", IEEE Proc. DASC vol. 2, pp 5.C.4.1-5	
	18	S. Prabhu, "Computer Aided Instruction for Statistics: A Knowledge-Based Systems Approach," Int'l J. of Computers in Adult Education and Training, Vol. 5(1), pp. 3-14., November 1995	
	19	J. Montgomery, R. Campbell and C. Moffett, "Conducting and Supporting a Goal-Based Scenario Learning Environment," Educational Technology, pp. 15-20, 1994	
	20	A. Zeller and D. Lutkehaus, "DDD—A Free Graphical Front-End for UNIX Debuggers," ACM Sigplan Notices, Vol. 31, No. 1, pp. 22-27, Jan. 1996,	
	21	Vanguard Software Corporation "Decision Pro3.0" at <a href="http://www.vanguardsw.com/">www.vanguardsw.com/</a> , Jan. 2001	
	22	B. Cheok and A. Nee, "Developing a Design System into an Intelligent Tutoring System," Int'l J. Engr. Eud., Vol. 13(5), pp-341-46, Dec. 1997	
	23	T. Nogami, Y. Yokoi, I. Yanagisawa and S. Mitui, "Development of a Simulation-Based Intelligent Tutoring System for Assisting PID Control Learning," IEICE Transactions on Information and Systems, E77-D, No. 1, Tokyo Japan, pp. 108-117, Jan. 1994	
	24	J. Gonzalez, J. Lopez, F. Bustio, P., Corcuera and E. Mora, "Development of an Integrated Simulator and Real Time Plant Information System," Advances in Operational Safety of Nuclear Power Plants, Proceedings of an International Symposium, pp. 543-549, September 1996.	
	25	P. Brusilovsky, S. Ritter and E. Schwarz, "Distributed Intelligent Tutoring on the Web," Artificial Intelligence in Education, pp. 482-89, Dec. 1997	
	26	R. Schank and M. Koruska, "Eight Goal-Based Scenario Tools", Technical Report # 87, Northwestern University, The Institute for the Learning Sciences, pp. 1-37, January 1996	
	27	J. Siemer and M. Angelides, "Embedding an Intelligent Tutoring System in a Business Gaming-Simulation Environment," Proc. Of the 1994 Winter Simulation Conference, pp. 1399-1406, Dec. 1994	
	28	"Engines for Education" <a href="http://www.ils.nwu.edu/~e_for_e/nodes/I-M-INTRO-ZOOMER-pg.html">http://www.ils.nwu.edu/~e_for_e/nodes/I-M-INTRO-ZOOMER-pg.html</a> ; July 2001.	
	29	S. Taylor and J. Siemer, "Enhancing Simulation Education with Intelligent Tutoring Systems," Proc. Of the 1998 Winter Simulation Conf., pp. 675-80, Dec. 1998	
	30	J. Siemer and M. Angelides, "Evaluating Intelligent Tutoring with Gaming Simulations," Proc. Of the 1995 Winter Simulation Conf., pp. 1376-83, Dec. 1995	
	31	A. Mitrovic and B. Martin, "Evaluating the effectiveness of feedback in SQL-tutor", IEEE, proc. Int'l workshop IWALT, pp 143-144, 2000	
↓	32	D. Foster, "FRA: Teaching Financial Accounting with a Goal-Based Scenario," Intelligent Systems in Accounting, Finance and Management, Vol. 4, pp. 173-189, September 1995	
BB	33	N. Livergood, "From Computer-Assisted Instruction to Intelligent Tutoring Systems," J. Artificial Intelligence in Education, V. 2(3), pp. 39-50, Dec. 1991	

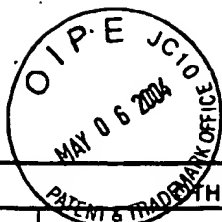
RECEIVED

MAY 11 2004

Technology Center 2100

/Benjamin Buss/

01/09/2007



OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
BB	34	R. Shank, "Goal-Based Scenarios and Business Training: A Conversation with Roger C. Schank," Educational Technology, pp. 27-29, Nov.-Dec. 1994	
	35	A. Collins, "Goal-Based Scenarios and the Problem of Situated Learning: A Commentary on Andersen Consulting's Design of Goal-Based Scenarios," Educational Technology, pp. 30-32, Nov.-Dec. 1994	
	36	R. Shank, "Goal-Based Scenarios", Technical Report # 38, Northwestern University, The Institute for the Learning Sciences, pp. 1-30, December 1992,	
	37	J. Rickel, "Intelligent Computer-Aided Instruction: A Survey Organized Around System Components," IEEE Inc., New York, Vol. 49, No. 1, pp. 40-57 - pp. 1-32, Jan. 1989	
	38	M. Yazdani, "Intelligent Tutoring Systems: An Overview" Experts Systems, Vol. 3, No. 3, pp. 154-162, July 1986	
	39	"Interactive Multimedia Instructs the Individual," Occupational Health & Safety Vol. 63, No. 10, pp. 144-145, Oct. 1994	
	40	J. Carroll and J. McKendree, "Interface Design Issue for Advice Giving Expert Systems", Comm. of the ACM, vol. 30, No. 1, pp.14-31, January 1987	
	41	"KBLPS Overview" at <a href="http://www.cgi.com/CGIWEB/KBLPS/overindex4.html">www.cgi.com/CGIWEB/KBLPS/overindex4.html</a> , August 1999	
	42	"Kiplinger TaxCut Press Releases" at <a href="http://www.taxcut.com/taxcut/98press_releases/pr98_november1998.html">http://www.taxcut.com/taxcut/98press_releases/pr98_november1998.html</a> , July 2001	
	43	G. Cole, "Learning with Computers," Accountancy Vol. 113, No. 1209, pp. 60-64, May 1994	
	44	J. Keys, R. Fulmer and S. Stumpf "Microworlds and Simuworlds: Practice Fields for the Learning Organization," Organizational Dynamics Vol. 24, No. 4, pp. 36-49, Spring 1996	
	45	"MUSE Patents" OCCAM Research Corporation, at <a href="http://www.muser.com/html/patents.html">www.muser.com/html/patents.html</a> , January 2001	
	46	"News for ESAP" at <a href="http://www.hops.wharton.upenn.edu/~esap/news.html">www.hops.wharton.upenn.edu/~esap/news.html</a> , August 1999	
	47	M. Cohn, "No More Boring CPE," Accounting Technology, pp. 27-35, July 1997	
	48	K. Lai, T. Malon, K. Yu, "Object Lens: A 'Spreadsheet' for Cooperative Work", ACM Transactions on Information Systems, Vol. 6, No. 4, pp. 332-353, Oct. 1988	
	49	J. Brown, R. Burton and J. DeKleer, "Pedagogical, Natural Language and Knowledge Engineering Techniques in SOPHIE I, II, and III," Intelligent Tutoring Systems, D. Sleeman & J.S. Brown eds., pp. 227-82, Dec. 1982	
	50	J. Caird, "Persistent Issues in the Application of Virtual Environment Systems to Training," Proceedings. Third Annual Symposium on Human Interaction with Complex Systems, IEEE, pp. 124-32, August 1998	
	51	D. Bill, "Popular Theory Supporting the Use of Computer Simulation for Experiential Learning," <a href="http://www.centurionsys.com/rtd57.html">http://www.centurionsys.com/rtd57.html</a> , pp. 1-5, July 2001	
	52	C. Cleary and R. Bareiss, "Practical Methods for Automatically Generating Typed Links", The Institute for Learning Sciences, Northwestern University, ACM Hypertext, pp 31-41, 1996	
	53	"Projects: FinPlan System", Russian Research Institute of Artificial Intelligence, at <a href="http://www.miai.org.ru/FinPlan">http://www.miai.org.ru/FinPlan</a> , July 2001	
↓	54	R. Azevedo, S. Lajoie, M. Desautniers, D. Fleiszer and P. Bret, "RadTutor: The Theoretical and Empirical Basis for the Design of a Mammography Interpretation Tutor," Proc. of 1997 World Conf. On Artificial Intelligence in Education, pp. 386-393 Dec. 1997	
BB	55	T. Cooper and N. Wogrin, "Rule-Based Programming with OPS5" Morgan Kaufmann Publishers, at <a href="http://www.mkp.com/books_catalog/O-934813-51-6.asp">www.mkp.com/books_catalog/O-934813-51-6.asp</a> , August 1999	

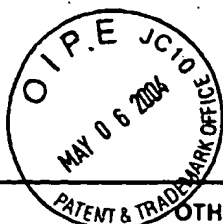
RECEIVED

MAY 11 2004

Technology Center 2100

/Benjamin Buss/

01/09/2007

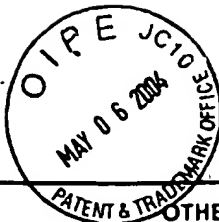


OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
BB	56	R. Min, "Simulation Technology and Parallelism in Learning Environments" at <a href="http://www.to.utwente.nl/prj/min/Book/chapter1.htm">http://www.to.utwente.nl/prj/min/Book/chapter1.htm</a> , pp. 1-26, July 2001	
	57	J. Shi, T. Smith, J. Granieri and N. Badler, "Smart Avatars in JackMOO," Proceedings of the 1999 IEEE Conference on Virtual Reality, pp. 156-163, 1999	
	58	V. Shute, "SMART Evaluation: Cognitive Diagnosis, Mastery Learning & Remediation," Proc. of 7th World Conf. On Artificial Intelligence in Education, pp. 123-130, Aug. 1995	
	59	C. Hafner and V. Wise, "Smartlaw: Adapting Classic Expert System Techniques for the Legal Research Domain", ACM pp 133-141, 1993	
	60	"Socialized Collaborative Learning in Multimedia Virtual Worlds" National University of Singapore, School Computing, at <a href="http://www.comp.nus.edu.sg/labs/learning/tels/vrml.html">http://www.comp.nus.edu.sg/labs/learning/tels/vrml.html</a> , pp. 1-4, July 2001	
	61	C. Whittington and L. Campbell, "Task-Oriented Learning on the Web"; Innovations in Education and Training International, Vol. 36, No. 1, pp. 26-33, Feb. 1999	
	62	D. Foster, "Teaching Real-World Analysis Skills for Goal-Based Scenario," The Institute for the Learning Sciences, Northwestern University, pp. 68-74, July 2001	
	63	M. Papagni, V. Cirillo and A. Micarelli, "Teaching Through Case-Based Reasoning: An ITS Engine Applied to Business Communication," Proc. of 1997 World Conf. On Artificial Intelligence in Education, pp. 115-119, Dec. 1997	
	64	T. Herron, "Teaching with the internet" 1998, The Internet and Higher Education, pp 217-222, 1998	
	65	D. Suthers, "Technical Report: Computer Aided Education and Training Initiative" at <a href="http://advlearn.lrdc.pitt.edu/advlearn/papers/FINALREP.html">http://advlearn.lrdc.pitt.edu/advlearn/papers/FINALREP.html</a> , pp. 1-51, January 1998	
	66	Workflow Template - Developing a WFT Workflow System, "Simulating the Running of the WFT Workflow System", Template Software Business Simulator, Chapter 8, pp. 1-23, 1998	
	67	R. Schank, A. Fano, M. Jona and B. Bell, "The Design of Goal-Based Scenarios", Technical Report # 39, Northwestern University, The Institute for the Learning Sciences, pp. 1-58, March 1993	
	68	J. Anderson and B. Reiser, "The Lisp Tutor," Byte, pp. 159-75, April 1985	
	69	D. McArthur, M. Lewis and M. Bishay, "The Roles of Artificial Intelligence in Education: Current Progress and Future Prospects" at <a href="http://www.rand.org/education/mcarthur/Papers/role.html">http://www.rand.org/education/mcarthur/Papers/role.html</a> , pp. 1-42, July 2001	
	70	W. van Joolingen, S. King and T. de Jong, "The SimQuest Authoring System for Simulation-Based Discovery Learning," Proc. of 1997 World Conf. On Artificial Intelligence in Education, pp. 79-86, Dec. 1997	
	71	A. Kumar, R. Pakala, R. Ragade and J. Wong, "The Virtual Learning Environment System," 28th Annual Frontiers in Education Conference, Conference Proceedings, Vol. 2, Nov. 4-7, 1998	
	72	M. McGee, "Train with Less Pain," at <a href="http://www.Informationweek.com">www.Informationweek.com</a> , pp. 150 and 154 October 1997	
	73	"TurboTax Deluxe Product Information" at <a href="http://www.intuit.com/turbotax/prodinfo/ttdlx.html">http://www.intuit.com/turbotax/prodinfo/ttdlx.html</a> , January 2001	
	74	J. Manzoni and A. Angehrn, "Understanding Organizational Dynamics of IT-Enabled Change: A Multimedia Simulation Approach," Journal of Management Information Systems: JMIS, Vol. 14, No. 3, pp. 109-140, Winter 1997/1998	
	75	"User-Sensitive Multimedia Presentation System," IBM Technical Disclosure Bulletin, Vol. 39, No. 3, pp. 93-94 March 1996	
✓	76	R. Kemp and S. Smith, "Using Planning Techniques to Provide Feedback in Interactive Learning Environments," Proc. Sixth Int'l Conf. On Tools with Artificial Intelligence, pp. 700-703, November 1994	
BB	77	R. Kemp, "Using the Wizard of Oz Technique to Prototype a Scenario-Based Simulation Tutor," Proc. of 1997 World Conf. On Artificial Intelligence in Education, pp. 458-465, December 1997	

RECEIVED  
MAY 11 2004  
Technology Center 2100

/Benjamin Buss/

01/09/2007



OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
BB	78	R. Schank, "Virtual Learning: A Revolutionary Approach to Building a Highly Skilled Workforce," Personnel Psychology Vol. 51, No. 3, pp. 767-771, Autumn 1998	
	79	J. Breuker, "What are Intelligent Coaching Systems and Why are they (In)evitable?" IEEE Colloquium on Artificial Intelligence in Educational Software, pp. 2/1-2/5, June 1998	
	80	"Why Should the Teens Have All the Best Games? Management Skill with Oil, Health, Housing Games," Computergram Int'l, June 17, 1996	
	81	E. Tam, P. Allard, M. Faraj, M. Kaddoura, A. Mourad, H. Liu, A. Malowany, R. Marceau, L. Granger and J. Gagnon, "WITS: A Reusable Architecture for a VR-Based ITS" at <a href="http://advlearn.irdc.pitt.edu/its-arch/papers/tam.html">http://advlearn.irdc.pitt.edu/its-arch/papers/tam.html</a> , pp. 1-5, July 2001	
	82	Microsoft Press, <i>Computer Dictionary</i> , 3 <sup>rd</sup> Edition, pp. 264, 276, 383, 446, 462, 507, 1997	
	83	L. Grensing-Prphal, "Flexible Learning", Credit Union Management Vol. 21, No. 2, pp. 32-33 and 38, Feb. 1998,	
	84	J. Wilson and D. Mosher, "The Prototype of the Virtual Classroom," Journal of Instruction Delivery Systems, Summer 1994, at <a href="http://www.educause.edu/nlii/articles/moshwils.html">http://www.educause.edu/nlii/articles/moshwils.html</a> , pp. 1-9, July 2001	
↓	85	T. Burns, "Multimedia Training... 'Get Lemonade, Not a Lemon!'" Journal for Quality and Participation, Vol. 20, No. 3, pp. 22-26, June 1997,	
BB	86	A. Seagren and B. Watwood, "The Virtual Classroom: Great Expectations. Delivering Graduate Education by Computer: A Success Story," 5 <sup>th</sup> Annual International Conf. for Community & Technical College Chairs, Deans and Other Organizational Leaders, pp 512-517, February 1996	

/Benjamin Buss/

01/09/2007

RECEIVED

MAY 11 2004

Technology Center 2100